APPENDIX

1. A method for cleaning semiconductor elements with ozonized deionized water in a tank, the method comprising:
   supplying oxygen to an ozone generator to generate an ozone/oxygen mixture according to the principle of silent electrical discharge;
   supplying the ozone/oxygen mixture to a contactor which has a through-flow of deionized water to produce the ozonized deionized water;
   adding sufficient CO_2 to the ozone/oxygen mixture supplied to the contactor to increase an ozone concentration in the ozonized deionized water delivered to the tank;
   directing the ozonized deionized water through the tank to clean the semiconductor elements; and
   removing spent ozonized deionized water from the tank.
2. The method of claim 1, further comprising filtering at least part of the spent ozonized deionized water, and re-circulating the filtered spent ozonized deionized water with fresh ozonized deionized water produced by the contactor.
3. The method of claim 1, further comprising at least substantially excluding air from the tank while cleaning the semiconductor elements.
4. The method of claim 1, wherein supplying the ozone/oxygen mixture to the contactor comprises causing the ozone/oxygen mixture to counterflow relative to the deionized water.
5. The method of claim 1, further comprising adding CO_2 to the oxygen supplied to the ozone generator to provide a CO_2 concentration of less than 5000 ppm in the oxygen to improve a stability of an ozone concentration of the ozone/oxygen mixture generated by the ozone generator.

6. The method of claim 5, wherein adding CO_2 to the oxygen supplied to the ozone generator comprises adding CO_2 to provide the CO_2 concentration in a range of 300-1000 ppm.

7. An apparatus for cleaning semiconductor elements, comprising:
   a container that receives the semiconductor elements;
   a device for generating ozonized deionized water connected to the container via pipes, the container having a discharge pipe for spent ozonized deionized water, the device comprising
      an ozone generator that generates an ozone/oxygen mixture, and
      a contactor to which deionized water is supplied and which is connected to the ozone generator via a connection pipe; and
   a CO_2 source connected via a valve to the connection pipe that directs the ozone/oxygen mixture from the ozone generator to the contactor to introduce CO_2 to the ozone/oxygen mixture.

8. The apparatus of claim 7, wherein the ozone generator is connected to an oxygen supply pipe, and wherein the CO_2 source is connected to the oxygen supply pipe via a control element selected from the group comprising a choke.

9. The apparatus of claim 7, wherein the container is configured as an overflow tank with a collection device for the spent ozonized deionized water.

10. The apparatus of claim 7, further comprising a filter through which a part of the spent ozonized deionized water is directed back to the ozonized deionized water generated by the device.

11. The apparatus of claim 7, wherein the container is sealed to exclude surrounding air.

12. The method of claim 1, wherein adding CO_2 to the ozone/oxygen mixture supplied to the contactor comprises adding CO_2 to provide a concentration in the ozone/oxygen mixture of up to 10% CO_2.

13. The method of claim 2 further comprising at least substantially excluding air from the tank while cleaning the semiconductor elements.

25. The method of claim 12, wherein adding CO_2 to the ozone/oxygen mixture supplied to the contactor comprises adding CO_2 to provide a concentration in the ozone/oxygen mixture of less than 1.0% CO_2.

26. The method of claim 1, wherein adding sufficient CO_2 to the ozone/oxygen mixture supplied to the contactor comprises adding sufficient CO_2 to cause the ozone concentration in the ozonized deionized water delivered to the tank to have a value in the range of 50 to 150 ppm.